

Chapter E3: Commercial Fishing Valuation

INTRODUCTION

This chapter presents the results of the commercial fishing benefits analysis for the South Atlantic region. Section E3.1 details the estimated losses under current, or baseline, conditions. Section E3.2 presents the expected benefits in the region attributable to the rule. Chapter A10 details the methods used in this analysis.

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Note that, while results for other regions have been sample weighted, no weighting is needed in the South Atlantic.

E3-1 BASELINE LOSSES

Table E3-1 provides EPA's estimate of the value of gross revenues lost in commercial fisheries resulting from the impingement of aquatic species at facilities in the South Atlantic region. Table E3-2 displays this information for entrainment. Total annual revenue losses are approximately \$1.9 million, assuming a 3 percent discount rate.

Table E3-1: Annual Commercial Fishing Gross Revenues Lost Due to Impingement at Facilities in the South Atlantic Region				
Species	Estimated Pounds of Harvest Lost	Estimated Value of Harvest Lost (in 2002\$)		
		Undiscounted	Discounted Using 3% Discount Rate	Discounted Using 7% Discount Rate
Alewife	58	6	6	5
American shad	3	2	1	1
Atlantic croaker	35,152	9,805	9,084	8,262
Atlantic menhaden	5,784,919	374,891	358,977	339,718
Black drum	34	22	18	14
Blue crab	37,752	25,961	25,378	24,654
Leatherjacket	33,272	35,188	33,817	32,158
Mackerels	129	58	53	48
Menhadens	420,229	22,310	20,982	19,405
Other (commercial)	192,936	103,955	97,767	90,421
Other (rec. and com.)	30,052	15,682	14,748	13,640
Sea basses (com. and rec.)	9	5	4	3
Shrimp (commercial)	64,799	150,772	135,362	118,808
Spot	187,565	76,998	73,057	68,472
Stone crab	966	1,392	1,353	1,306
Striped bass	2,241	3,722	3,158	2,574
Striped mullet	58,353	38,631	35,404	31,727
Summer flounder	3,788	5,737	5,104	4,433

Table E3-1: Annual Commercial Fishing Gross Revenues Lost Due to Impingement at Facilities in the South Atlantic Region

Species	Estimated Pounds of Harvest Lost	Estimated Value of Harvest Lost (in 2002\$)		
		Undiscounted	Discounted Using 3% Discount Rate	Discounted Using 7% Discount Rate
Weakfish	26,348	16,985	16,158	15,199
Windowpane	11	4	4	3
Other (forage)	1,104	429	386	340
TOTAL	6,879,719	882,554	830,820	771,190

Table E3-2: Annual Commercial Fishing Gross Revenues Lost Due to Entrainment at Facilities in the South Atlantic Region

Species	Estimated Pounds of Harvest Lost	Estimated Value of Harvest Lost (in 2002\$)		
		Undiscounted	Discounted Using 3% Discount Rate	Discounted Using 7% Discount Rate
Alewife	7	1	1	1
American shad	611	363	315	263
Atlantic croaker	501,555	160,462	144,331	126,376
Atlantic menhaden	221,906	14,381	13,369	12,179
Black drum	6,239	4,093	3,224	2,422
Blue crab	316,777	232,452	220,612	206,307
Leatherjacket	658	696	649	594
Menhadens	1,677	89	81	72
Other (commercial)	2,186	1,181	1,078	960
Other (rec. and com.)	360,122	187,918	171,585	152,759
Sheepshead	6	2	2	2
Shrimp (commercial)	15,476	36,009	34,960	33,653
Spot	672,302	283,324	260,992	235,467
Stone crab	955	1,376	1,299	1,206
Striped bass	17,720	29,429	24,752	19,865
Striped mullet	167,925	111,172	98,915	85,329
Weakfish	95,362	61,476	56,777	51,411
Other (forage)	352,237	135,018	121,594	107,043
TOTAL	2,733,721	1,259,441	1,154,537	1,035,910

E3-2 BENEFITS

As described in Chapter A10, EPA estimates that 0 to 40 percent of the gross revenue losses represent surplus losses to producers, assuming no change in prices or fishing costs. The 0 percent estimate, of course, results in loss estimates of \$0. The 40 percent estimates, as presented in the Table E3-3, total approximately \$0.8 million when a 3 percent discount rate is assumed.

The expected reductions in I&E attributable to changes at facilities required by the rule are 33.7 percent for impingement and 17.1 percent for entrainment. Total annual benefits are estimated by applying these estimated reductions to the annual producer surplus loss. As presented in Table E3-3, this results in total annual benefits of \$0.2 million, assuming a 3 percent discount rate.

Table E3-3: Annual Commercial Fishing Benefits Attributable to Phase II Rule at Facilities in the South Atlantic Region (million 2002\$), Assumes Compliance in 2005

	Impingement	Entrainment	Total
Baseline loss — gross revenue			
Undiscounted	\$0.9	\$1.3	\$2.1
3% discount rate	\$0.8	\$1.1	\$1.9
7% discount rate	\$0.7	\$1.0	\$1.7
Producer surplus lost — low	\$0.0	\$0.0	\$0.0
Producer surplus lost — high (gross revenue * 0.4)			
Undiscounted	\$0.4	\$0.5	\$0.9
3% discount rate	\$0.3	\$0.4	\$0.8
7% discount rate	\$0.3	\$0.4	\$0.7
Expected reduction due to rule^a	43.7%	17.1%	---
Benefits attributable to rule — low	\$0.0	\$0.0	\$0.0
Benefits attributable to rule — high			
Undiscounted	\$0.2	\$0.1	\$0.2
3% discount rate	\$0.1	\$0.1	\$0.2
7% discount rate	\$0.1	\$0.1	\$0.2

^a Estimated based on EPA's assumptions. EPA's assumption about the amount of electricity that will be produced in the future differs very slightly from DOE's. For the South Atlantic region the EPA and DOE estimates are the same.